

CH2MHILL

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*Proud Sponsor of
National Engineers Week 2000*

January 21, 2002

Patricia Leary
California Regional Water Quality Control Board
3443 Routier Road, Suite A.
Sacramento, CA 95827-3003

**SUBJECT: COSUMNES POWER PLANT, APPLICATION FOR NPDES PERMIT
DISCHARGE**

Dear Ms. Leary:

As you know, CH2M HILL is assisting Sacramento Municipal Utility District to prepare permit documents for the proposed Cosumnes Power Plant.

Enclosed, please find an **Application for Permit to Discharge Process Wastewater** for the proposed Cosumnes Power Plant. We appreciate your assistance preparing this application in the many conversations we have had prior to this. Here enclosed is the application.

The applications comprises:

EPA Application Form 1

Application Form 2D with attached table of Estimated Discharge Water Quality

Supplemental Information

Figures 8.14-3aR and 8.14-3cR showing Water Balance

USGS Topographic Map

Please review the enclosed materials and advise me of any additional information you require.
Contact me at (916)920-0212 Ext 305 if you have questions.

Sincerely,

EJ Koford

Sr. Biologist

FORM <div style="font-size: 2em; font-weight: bold; text-align: center;">1</div> GENERAL	U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION <i>Consolidated Permits Program</i> <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">F</td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> <td style="width:10%;"> </td> </tr> </table>	F									
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LABEL ITEMS <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">I. EPA I.D. NUMBER</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">III. FACILITY NAME</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">V. FACILITY MAILING ADDRESS</div> <div style="border: 1px solid black; padding: 2px;">VI. FACILITY LOCATION</div>	<div style="margin-bottom: 10px;"> COSUMNES POWER PLANT SMUD 6201 S STREET SACRAMENTO, CA 95817 ATTN: COLIN TAYLOR </div> <div> RANCHO SECO GENERATING STATION HERALD, CA </div>
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GENERAL INSTRUCTIONS

a preprinted label has been provided, affix in the designated space. Review the information carefully; if any of it is incorrect, correct it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the appropriate fill-in area(s) below. If the label is incomplete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X'			SPECIFIC QUESTIONS	MARK 'X'		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)	X		
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	X			J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1	SKIP	COSUMNES POWER PLANT
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IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 TAYLOR, COLIN, DIRECTOR	916 732 6724

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX			
3 6201 S STREET			
B. CITY OR TOWN		C. STATE	D. ZIP CODE
4 SACRAMENTO		CA	95817

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER			
5 CLAY EAST ROAD			
B. COUNTY NAME			
SACRAMENTO			
C. CITY OR TOWN		D. STATE	E. ZIP CODE
6 HERALD		CA	95638
		F. COUNTY CODE (if known)	

California Environmental Protection Agency

Bill of Rights for Environmental Permit Applicants

California Environmental Protection Agency (Cal/EPA) recognizes that many complex issues must be addressed when pursuing reforms of environmental permits and that significant challenges remain. We have initiated reforms and intend to continue the effort to make environmental permitting more efficient, less costly, and to ensure that those seeking permits receive timely responses from the boards and departments of the Cal/EPA. To further this goal, Cal/EPA endorses the following precepts that form the basis of a permit applicant's "Bill of Rights."

1. Permit applicants have the right to assistance in understanding regulatory and permit requirements. All Cal/EPA programs maintain an Ombudsman to work directly with applicants. Permit Assistance Centers located throughout California have permit specialists from all the State, regional, and local agencies to identify permit requirements and assist in permit processing.
2. Permit applicants have the right to know the projected fees for review of applications, how any costs will be determined and billed, and procedures for resolving any disputes over fee billings.
3. Permit applicants have the right of access to complete and clearly written guidance documents that explain the regulatory requirements. Agencies must publish a list of all information required in a permit application and of criteria used to determine whether the submitted information is adequate.
4. Permit applicants have the right of timely completeness determinations for their applications. In general, agencies notify the applicant within 30 days of any deficiencies or determine that the application is complete. California Environmental Quality Act (CEQA) and public hearing requests may require additional information.
5. Permit applicants have the right to know exactly how their applications are deficient and what further information is needed to make their applications complete. Pursuant to California Government code Section 65944, after an application is accepted as complete, an agency may not request any new or additional information that was not specified in the original application.
6. Permit applicants have the right of a timely decision on their permit application. The agencies are required to establish time limits for permit reviews.
7. Permit applicants have the right to appeal permit review time limits by statute or administratively that have been violated without good cause. For state environmental agencies, appeals are made directly to the Cal/EPA Secretary or to a specific board. For local environmental agencies, appeals are generally made to the local governing board or, under certain circumstances, to Cal/EPA. Through this appeal, applicants may obtain a set date for a decision on their permit and, in some cases, a refund of all application fees (ask boards and departments for details).
8. Permit applicants have the right to work with a single lead agency where multiple environmental approvals are needed. For multiple permits, all agency actions can be consolidated under a lead agency. For site remediation, all applicable laws can be administered through a single agency.
9. Permit applicants have the right to know who will be reviewing their application and the time required to complete the full review process.



Permits Division

Application Form 1 - General Information

Consolidated Permits Program

This form must be completed by all persons applying for a permit under EPA's Consolidated Permits Program. See the general instructions to Form 1 to determine which other application forms you will need.

CALIFORNIA ENVIRONMENTAL
PROTECTION AGENCY

State of California
Regional Water Quality Control Board
APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



I. FACILITY INFORMATION

A. Facility:

Name: COSUMNES POWER PLANT - SMUD			
Address: 16201 S STREET			
City: SACRAMENTO	County: SAC	State: CA	Zip Code: 95817
Contact Person: COLIN TAYLOR DIRECTOR		Telephone Number: 916-732-6724	

B. Facility Owner:

Name: SAME			Owner Type (Check One) 1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation 3. <input checked="" type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership 5. <input type="checkbox"/> Other: _____	
Address:				
City:	State:	Zip Code:		
Contact Person:		Telephone Number:	Federal Tax ID:	

C. Facility Operator (The agency or business, not the person):

Name: SAME			Operator Type (Check One) 1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation 3. <input type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership 5. <input type="checkbox"/> Other: _____	
Address:				
City:	State:	Zip Code:		
Contact Person:		Telephone Number:		

D. Owner of the Land:

Name: SAME			Owner Type (Check One) 1. <input type="checkbox"/> Individual 2. <input type="checkbox"/> Corporation 3. <input type="checkbox"/> Governmental Agency 4. <input type="checkbox"/> Partnership 5. <input type="checkbox"/> Other: _____	
Address:				
City:	State:	Zip Code:		
Contact Person:		Telephone Number:		

E. Address Where Legal Notice May Be Served:

Address: SAME		
City:	State:	Zip Code:
Contact Person:	Telephone Number:	

F. Billing Address:

Address: SAME		
City:	State:	Zip Code:
Contact Person:	Telephone Number:	

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)											
A. FIRST					B. SECOND						
7	4	9	1	1	(specify)	7	1	6	2	9	(specify)
ELECTRIC POWER GENERATION					POWER PLANT CONSTRUCTION						
C. THIRD					D. FOURTH						
7					(specify)	7				(specify)	

VIII. OPERATOR INFORMATION												
A. NAME												
8	SACRAMENTO MUNICIPAL UTILITY DISTRICT											
B. Is the name listed in Item VIII-A also the owner?												
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO												
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other", specify.)												
F = FEDERAL	M = PUBLIC (other than federal or state)											
S = STATE	O = OTHER (specify)											
P = PRIVATE		M	MUNICIPAL UTILITY									
D. PHONE (area code & no.)												
		A	9	1	6	7	3	2	6	7	2	4
E. STREET OR P.O. BOX												
6201 S. STREET												
F. CITY OR TOWN												
SACRAMENTO												
G. STATE												
CA												
H. ZIP CODE												
95817												
IX. INDIAN LAND												
Is the facility located on Indian lands?												
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO												

X. EXISTING ENVIRONMENTAL PERMITS									
A. NPDES (Discharges to Surface Water)					D. PSD (Air Emissions from Proposed Sources)				
9	N				9	P			NONE
B. UIC (Underground Injection of Fluids)					E. OTHER (specify)				
9	U				9				(specify)
C. RCRA (Hazardous Wastes)					E. OTHER (specify)				
9	R				9				(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

ELECTRICAL GENERATION

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED

COMMENTS FOR OFFICIAL USE ONLY

C	
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Form
2D
NPOES



EPA New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

For each outfall, list the latitude and longitude, and the name of the receiving water.

II. Discharge Date (When do you expect to begin discharging?)

APRIL 2004

A. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

EPA Form 3510-2D (Rev. 8-90)

C. Except for storm runoff, leaks, or spills, will any of the discharges described in item III-A be intermittent or seasonal?

☒ No (go to item IV)

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week (specify average)	b. Months Per Year (specify average)	a. Maximum Daily Flow Rate (in mgd)	b. Maximum Total Volume (specify with units)	c. Duration (in days)

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not design), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc (specify)
			NA

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant

2. Reason for Discharge

*None
anticipated*

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☐

Report Available

☒

No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name

Location

VII. Other Information (Optional)

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

- see attached -

VIII. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name and Official Title (type or print)**B. Phone No.****C. Signature****D. Date Signed**

CALIFORNIA ENVIRONMENTAL
PROTECTION AGENCY



State of California
Regional Water Quality Control Board

APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT



II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application (A or B):

☐ A. WASTE DISCHARGE TO LAND

☒ B. WASTE DISCHARGE TO SURFACE WATER

Check all that apply:

☐ Domestic/Municipal Wastewater
Treatment and Disposal

☒ Cooling Water

☐ Mining

☐ Waste Pile

☐ Wastewater Reclamation

☐ Other, please describe: _____

☐ Animal Waste Solids

☐ Land Treatment Unit

☐ Dredge Material Disposal

☐ Surface Impoundment

☐ Industrial Process Wastewater

☐ Animal or Aquacultural Wastewater

☐ Biosolids/Residual

☐ Hazardous Waste (see instructions)

☐ Landfill (see instructions)

☐ Storm Water

III. LOCATION OF THE FACILITY

Describe the physical location of the facility.

1. Assessor's Parcel Number(s)

Facility: 140-050-010, 140-090-008
Discharge Point: 140-050-010

2. Latitude

Facility: SAME
Discharge Point: 38,34

3. Longitude

Facility: SAME
Discharge Point: 121.12

IV. REASON FOR FILING

☒ New Discharge or Facility

☐ Changes in Ownership/Operator (see instructions)

☐ Change in Design or Operation

☐ Waste Discharge Requirements Update or NPDES Permit Reissuance

☐ Change in Quantity/Type of Discharge

☐ Other: _____

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency: CALIFORNIA ENERGY COMMISSION

Has a public agency determined that the proposed project is exempt from CEQA?

☐ Yes

☒ No

If Yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below.

Basis for Exemption/Agency: _____

Has a "Notice of Determination" been filed under CEQA?

☐ Yes

☒ No

If Yes, enclose a copy of the CEQA document, Environmental Impact Report, or Negative Declaration. If no, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents:

☐ EIR

☐ Negative Declaration

Expected CEQA Completion Date: JUNE 2002

☒ AEC

VII. Supplemental Information to NPDES Application for Process Water Discharge Cosumnes Power Plant

Introduction

The Sacramento Municipal Utility District (the District) proposes to develop a natural gas-fired generating facility south of the Rancho Seco Nuclear Plant (Rancho Seco Plant) in Sacramento County, 25 miles southeast of the city of Sacramento. The proposed project will be located on a 30-acre parcel that is part of 2,480 acres owned by the District. It will be a high-efficiency, combined-cycle facility that will provide electricity to the District's customers.

The CPP facility will consist of:

- A nominal 1,000-megawatt (MW) combined-cycle generating facility, using natural gas-fired combustion turbines, steam turbines, and associated infrastructure. The plant will be constructed in two phases of 500 MW. Each phase will consist of two combustion turbines, one condensing steam turbine, and two heat recovery steam generators (HRSGs)
- A 230-kilovolt (kV) switchyard
- Approximately 0.4-mile-long new 230-kV transmission line from the switchyard on-site to the existing 230-kV switchyard at the Rancho Seco Plant
- Approximately 26 miles of District-owned natural gas supply line between the project and the Carson Ice-Gen Facility in Sacramento County
- Cooling water will be conveyed from the Folsom-South Canal to the site from a 0.4 mile connection to existing 66-inch diameter underground water line currently servicing the Rancho Seco Plant
- A package treatment plant will provide domestic water by treating surface water from the Folsom-South Canal pipeline
- Approximately 1.5 acres of stormwater detention
- A package treatment/leach system for sanitary wastes

The project site is located on approximately 30 acres in Section 29, Township 6N, Range 8E Mount Diablo base and meridian, adjacent to the Rancho Seco Plant). CPP is located on the southeastern quarter of APN 140-0050-010, and on the southwestern quarter of APN 140-0050-008.

The CPP facility would use raw water from the Folsom-South Canal for cooling and process makeup water. Cooling water would be discharged to Clay Creek, according to the requirements and conditions of a National Pollution Discharge Elimination System (NPDES) permit for surface water discharge. Stormwater would be routed to a new 1.5-acre detention

pond that will hold a volume of 100,000 cubic feet of water, and from there discharge to Clay Creek at a rate not to exceed the present discharge rate. Domestic water would be provided by treating Folsom-South Canal water to Title 22 standards using an on-site package treatment plant. Sanitary waste would be discharged to an on-site septic and leachfield system.

Construction of both phases of the CPP, including the linear routes will take approximately 44 months, from winter 2002 to summer 2006. Phase 1 is anticipated to take 24 months to complete, and Phase 2 is expected to be completed in 18 months, with a 2-to 3-month idle period between phases.

The plant, transmission lines, and natural gas supply line will be owned and operated by the Sacramento Municipal Utility District.

VI. Characterization of the Discharge:

Cooling water will be cycled from 3 to 10 times (depending on water quality) in the cooling tower before being discharged to Clay Creek. Domestic water will be provided by diverting a portion of the Folsom-South Canal water to a package treatment plant for domestic use.

This section describes the quantity of water required, the source(s) of the water supply, and water treatment requirements. Two water balance diagrams are included, representing the annual average operation at 61° F with four CTGs operating at 100-percent load and CTG inlet air fogging (see Figures 2.2-6a and 2.2-6b).

Water Requirements

The estimated average (61 degrees F) and peak (104 degrees F) daily quantity of water required is presented in Table 2.2-1. The daily water requirements shown are estimated quantities based on the combined-cycle plant operating at a constant 1040-MW at an ambient temperature of 61 degrees F. Peak water requirements are based on the plant operating at a constant 997 MW at an ambient temperature of 104 degrees F. The water balances and water requirements for the peak condition reflect the use of CTG inlet air fogging on a continuous basis.

TABLE 2.2-1
Estimated Average (61 degrees F) and Peak (104 degrees F) Water Requirements

Conditions	Flow Requirements
Average (61 degrees F) 1040 MW, no fogging	4,920 gpm (7.1 million gallons per day [gpd]; or 8,000 AFY)
Peak (104 degrees F) 997 MW, inlet fogging	7,706 gpm (11.1 million gpd; 12,431 AFY)

Water Supply

During normal operation, 97 percent of the total water requirements for the CPP are for cooling water that is used to condense steam discharging from the steam turbine. The cooling water is then circulated through the cooling tower to transfer the heat gained from condensing the steam into the atmosphere. During peak operation (maximum CTG output

and inlet air fogging), 96 percent of the total water requirements are for cooling water makeup.

The remaining water needed for the plant is for process makeup water for the HRSGs, CTG inlet air fogging, miscellaneous leaks and drains, plant general service water, and potable water for domestic use.

Water Quality

An analysis of the water quality from the Bureau is provided in Section 8.14, Water Resources.

Water Treatment

Figures 8.14-3aR and 8.14-3cR illustrate the water treatment and distribution system. Water use can be divided into the following three levels based on the quality required: (1) water for the circulating or cooling water system and service water for the plant, which includes all other miscellaneous uses; (2) demineralized water for makeup to the HRSGs; and (3) potable water. Water treatment required to obtain these three levels of quality is described in the following paragraphs.

Water for the Circulating Water System

Makeup water for the circulating water system will be surface water from the Folsom-South Canal. This water will be fed directly into two, 2.5-million-gallon aboveground storage tanks (ASTs). These tanks will serve the following purposes: (1) the tanks will provide approximately 16 hours of operational storage for a flow of 4,920 gpm in the event that there is a disruption in the flow of the raw water; (2) the tanks allow a means to provide an air gap to protect the Bureau's raw water supply from potential contamination by plant circulating water; and (3) the tanks will provide 2 hours of backup fire protection water storage at a flow rate of 1,500 gpm. In addition, backup water will be supplied by Rancho Seco Reservoir by connecting to an existing 48-inch-diameter gravity feed line. Makeup water will be fed from the storage tanks to the cooling tower basin as required to replace water lost from evaporation, drift, and blowdown.

A chemical feed system will supply water-conditioning chemicals to the circulating water to minimize corrosion and control the formation of mineral scale and biofouling. If required, sulfuric acid may be fed into the circulating water system in proportion to makeup water flow for alkalinity reduction to control the scaling tendency of the circulating water. The acid feed equipment will consist of a sulfuric acid storage tote and two full-capacity sulfuric acid metering pumps.

To further inhibit scale formation, a polyacrylate solution will be fed into the circulating water system as a sequestering agent in an amount proportional to the circulating water blowdown flow. The scale inhibitor feed equipment will consist of a chemical solution bulk storage tank and two full-capacity scale inhibitor metering pumps.

To prevent biofouling in the circulating water system, sodium hypochlorite (bleach) will be fed into the system as a biocide. The hypochlorite feed equipment will consist of a bulk storage tank and two full-capacity hypochlorite metering pumps. Systems will also be provided for the feeding of alternate biocides. A bulk storage tank and two full-capacity metering pumps will be provided for the feeding of either stabilized bromine or sodium

bromide. Facilities for feeding a non-oxidizing biocide will include 200- to 400-gallon totes and 2 full-capacity chemical metering pumps.

Service water will include all water uses at the plant except for the circulating water previously discussed and the demineralized water used in the HRSG (discussed in the following section). Water will be supplied from the raw water storage tank.

Makeup Water for the HRSGs

Makeup water for the HRSGs will be taken from the service water storage tank and treated before it is used. The expected treatment methods include multimedia filtration, reverse osmosis (RO), and demineralization by ion exchange to remove suspended and dissolved solids.

The filtered demineralized water will be stored in two 250,000-gallon demineralized water storage tanks. This capacity provides approximately 16 hours of supply for a 104-degree F day. HRSG makeup water and inlet fogging water will be drawn from the demineralized water storage tanks.

Chemical feed systems will provide additional conditioning of the water in the HRSGs to minimize corrosion and scale formation. The system will feed an oxygen scavenger to the feedwater to control dissolved oxygen and a chemical to control pH. The design will provide for the automatic feeding of the oxygen scavenger in proportion to the HRSG makeup flow. The system will include an oxygen scavenger solution feed tank and two full-capacity chemical feed pumps.

The cycle chemical feed systems will also feed sodium phosphate to control pH and minimize scale formation. The systems will be designed for operation using the low solids, congruent phosphate method of boiler water treatment. The design will provide for feeding sodium phosphates to the boiler water to react with any hardness present. For congruent phosphate treatment, a dilute solution of a disodium phosphate and trisodium phosphate mixture will be prepared manually in a phosphate solution tank dedicated to each steam drum. Phosphate feeding to each steam drum will be initiated manually based on boiler water phosphate residual and pH. One full-capacity phosphate feed pump will be provided for each steam drum, with one common spare pump serving each drum pressure level.

Potable Water System

The potable water system will consist of a bulk storage tank, transfer pumps, pressurized tank, chlorine dosing system, and distribution system. Water into the system will come from water that has passed through the ultra-filter that also supplies the reverse osmosis system. This water will meet all potable water purity requirements and will be stored in the bulk water tank with a capacity of 2,500 gallons. Water will be withdrawn from the bulk storage tank to replenish the pressurized water tank, with a capacity of 250 gallons, when the tank pressure falls below a prescribed level. This water, as it is being transferred to the pressurized tank, will be dosed with chlorine to meet the chlorination requirements for drinking water. Upon demand from the potable water system, water under pressure will be withdrawn from the pressurized water tank. A sampling program will be instituted to ensure proper ultra-filter operation and chlorine dosing operation.

Plant Cooling Systems

The cycle heat rejection system will consist of a deaerating steam surface condenser, cooling tower, and circulating water system. The heat rejection system will receive exhaust steam from the low-pressure steam turbine and condense it into water for reuse. The surface condenser will be a shell-and-tube heat exchanger with the steam condensing on the shell side and the cooling water flowing in one or more passes inside the tubes. The condenser will be designed to operate at sub-atmospheric pressure, ranging from 1 to 5 inches of mercury, absolute (in Hga.), depending on ambient temperature and plant load. It will remove up to 1,000 MMBtu/hr, depending on ambient temperature and plant load. Approximately 126,000 gallons per minute (gpm) of circulating cooling water is required per condenser to condense the steam at maximum plant load.

The circulating water will circulate through a counter-flow mechanical draft cooling tower, which uses electric-motor-driven fans to move the air in a direction opposite to the flow of the water. The heat removed in the condenser will be discharged to the atmosphere by heating the air and through evaporation of some of the circulating water. Maximum drift, which is the fine mist of water droplets entrained in the warm air leaving the cooling tower, will be limited to 0.0005 percent of the circulating water flow.

A closed-loop auxiliary cooling system will be provided for cooling plant equipment other than the steam condenser. Equipment served by the auxiliary cooling water system includes the CTG and STG lube oil coolers, CTG and STG generator coolers, STG hydraulic control system cooler, boiler feed pump lube oil and seal water coolers, air compressor, vacuum pump seal coolers, and sample coolers. Auxiliary cooling water pumps will pump circulating water from the cooling tower basin through heat exchangers to remove heat from the closed loop system.

Table V. Effluent Characteristics

Estimated Water Quality of Discharge for Proposed Cosumnes Power Plant Project Effluent.

Constituent/Limits Parameter	Average Daily Value (Concentration)	Average Daily Value (mass lb/day)
Group A		
Biochemical Oxygen Demand	5	NA
Chemical Oxygen Demand	5	NA
Total Organic Carbon (TOC)	5	0.06
Total Suspended Solids (TSS)	15	
Flow	477	
Ammonia (as N)	1.3	
Temperature (winter)	85	
Temperature (summer)	91	
pH	8	
Oil and Grease	10	
Total Hardness	325	14.81
Total Alkalinity	456.3	20.80
Silica	156	7.11
Turbidity	30 NTU	
TDS	611	27.85
Group B		
Total Residual Chlorine	0.013	0.00
Sulfate	23.4	1.07
Aluminum	156	0.01
Antimony	6.5	0.00
Arsenic	6.5	0.00

Constituent/Limits Parameter	Maximum Daily Value (Concentration)	Maximum Daily Value (Mass)	Average Daily Value (Concentration)	Average Daily Value (mass lb/sday)
Barium	208		160 µg/L	0.01
Beryllium	6.5		ND	0.00
Boron	299		230 µg/L	0.01
Cadmium	1.3		ND	0.00
Chromium, Hexavalent	13		10 µg/L	0.00
Cobalt	6.5		ND	0.00
Copper	13		19 µg/L	0.00
Fluoride	13		ND	0.00
Iron	1287		990 µg/L	0.06
Lead	32.5		25 µg/L	0.00
Magnesium	23.4		18 mg/L	0.00
Manganese	130		100 µg/L	0.01
Mercury	0.65		ND	0.00
Molybdenum	6.5		ND	0.00
Nickel	13		ND	0.00
Silicon	74.1		57 mg/L	3.38
Silver	1.3		ND	0.00
Selenium	6.5		ND	0.00
Strontium	858		660 µg/L	0.04
Thallium	6.5		ND	0.00
Vanadium	6.5		ND	0.00
Zinc	78		60 µg/L	0.00
TCDD	1		ND	ND
BTEX (µg/L)				
Benzene	5		ND	ND
Toluene	5		ND	ND
Ethylbenzene	5		ND	ND
Xylenes (total)	5		ND	ND

All concentrations based on water quality analysis of Folsom South Canal collected by EBMUD and Sequoia Analytical.

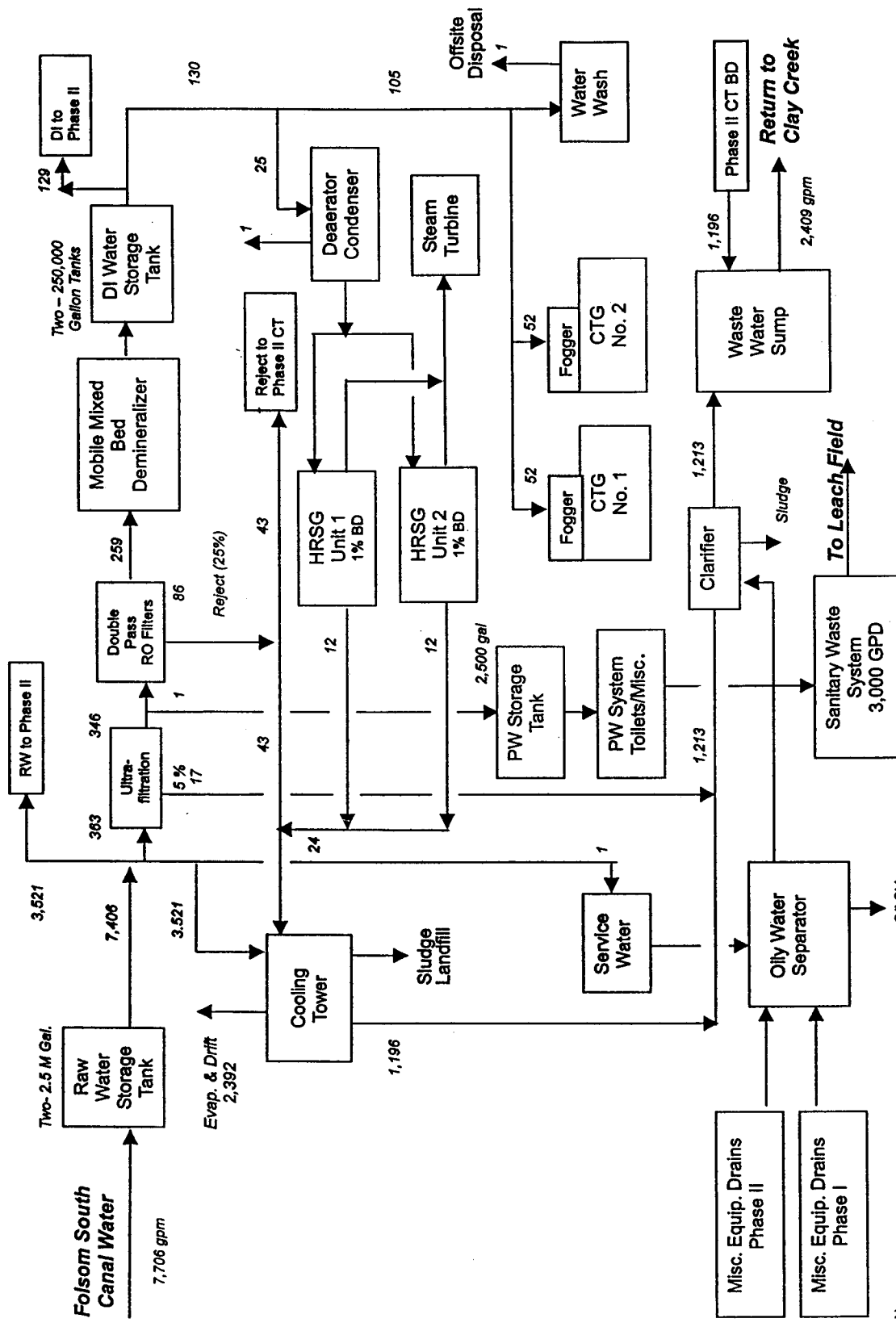
Concentration of effluent was calculated based on presumed cycles of concentration of 5-10 in cooling tower by Parsons Engineering.



ALL FLOWRATES ARE GIVEN IN GPM (UNLESS NOTED).
FLOWS ARE BASED ON FULL LOAD OPERATION, ANNUAL AVERAGE TEMPERATURE OF 61 DEGREES F.
COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 3.0 CYCLES OF CONCENTRATION.
FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.

SOURCE: PB POWER, INC.

0062001002RDD_10 (9/9/01)



NOTES:
 ALL FLOWRATES ARE GIVEN IN GPM.
 FLOWS ARE BASED ON FULL LOAD OPERATION WITH AN AMBIENT TEMPERATURE OF 104 DEGREES F. 70 WB.
 COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 3.0 CYCLES OF CONCENTRATION.
 FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.
 SOURCE: PB POWER, INC.

FIGURE 8.14-3CR
PHASE I - 104 DEGREES FAHRENHEIT
PEAK WATER BALANCE DIAGRAM
 COSUMNES POWER PLANT
 APPLICATION FOR CERTIFICATION

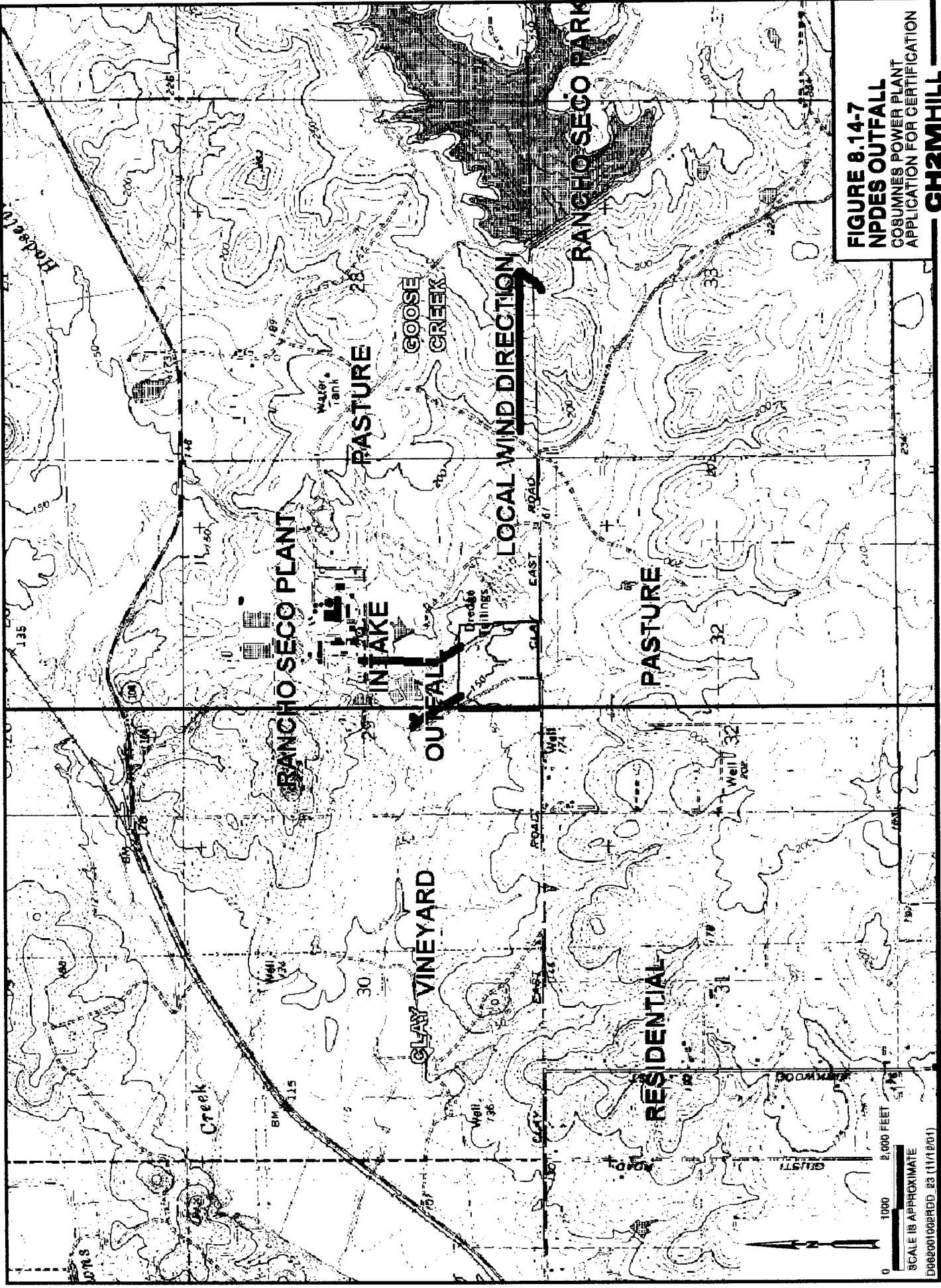


FIGURE 8.14-7
NPDES OUTFALL
 COSUMES POWER PLANT
 APPLICATION FOR CERTIFICATION



1041'-0"

A

F

LEGEND

1. ELECTRICAL SUBSTATION AREA
2. SWITCHYARD CONTROL BUILDING
3. GENERATOR STEP-UP TRANSFORMER
4. UNIT AUX. TRANSFORMER (18/4.16KV)
5. EXCITATION TRANSFORMER
6. BLOWER SKID
7. 4160V/480V TRANSFORMERS
8. DEMINERALIZED WATER PUMPS
9. NOT USED
10. ISO-PHASE BUS DUCT
11. PACKAGED ELECTRICAL AND ELECTRONIC CONTROL CENTER (PEECC)
12. GT GENERATOR
13. GT AUXILIARY PACKAGE
14. ISOLATION TRANSFORMER
15. GAS TURBINE AIR INLET FILTER
16. GENERATOR BREAKER
17. COMBUSTION TURBINE (CT)
18. COMPRESSOR WATER WASH SKID
19. STG ELECTRICAL EQUIPMENT BLDG.
20. STEAM TURBINE GENERATOR
21. STG LUBE OIL
22. CLAND STEAM SKID
23. CLAND STEAM CONDENSER
24. SEAL OIL EQUIPMENT SKID
25. STEAM TURBINE (STG)
26. STEAM JET AIR/HOGGER/SJAE
27. CONDENSATE PUMPS
28. CONDENSER
29. EVAPORATIVE COOLER
30. OUTFALL SUMP
31. HR BLOWDOWN TANK
32. HEAT RECOVERY STEAM GENERATOR (HRSG)
33. FUEL GAS DEW POINT HEATER
34. BOILER FEED PUMPS
35. HRSG STACK
36. CEM/HR DPU SHELTER
37. WAREHOUSE
38. ADMINISTRATION AND MAINTENANCE BUILDING
39. SERVICE/FIRE WATER STORAGE TANK
40. FIRE PUMPS
- 41.
- 42.
43. EQUIPMENT DRAIN SUMP
44. DEMINERALIZED WATER STORAGE TANK - (2 @ 250,000 gallons)
45. WATER TREATMENT BUILDING
46. DETENTION POND
47. AUXILIARY COOLING WATER PUMP
48. CIRCULATING WATER PUMPS
49. ELECTRICAL EQUIPMENT BLDG
50. OIL/WATER SEPARATOR
51. COOLING TOWER ELECTRICAL EQUIPMENT BLDG
52. COOLING TOWER
53. CT DRAIN SUMP
54. LEACH FIELD
55. SEPTIC TANK
56. FILTER WATER PUMPS
57. FIRE PROTECTION DE LUGE HOUSE
58. COOLING TOWER CHEMICAL STORAGE
59. CO2 SKID PURGE
60. LCI/GENERATOR EXCITATION COMPARTMENT
61. CLOSED LOOP AUX. COOLING WATER HEAT EXCHANGER
62. DC LINK REACTOR
63. AMMONIA STORAGE TANKS
64. CO2 FIRE PROTECTION
65. HYDROGEN TANKS
66. ELECTRICAL MANHOLE
- 67.
68. NEUTRAL GROUNDING TRANSFORMER/RESISTOR CUBICLE
- 69.
70. SCR SKID
- 71.
- 72.
73. STORM DRAIN MANHOLE
74. PUMP PIT (RETENTION POND)
75. OVER FLOW (RETENTION POND)
- 76.
77. GAS REGULATOR AND COMPRESSOR STATION
78. FUEL GAS HEATER
- 79.
- 80.
81. PIPE RACK
- 82.
- 83.
- 84.
85. OIL CONDITIONER SKID
- 86.

REVISIONS		DATE	BY	CHK	DATE
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		SACRAMENTO MUNICIPAL UTILITY DISTRICT	
		The Power To Do More	
		COSUMNES POWER PLANT	
		SITE GENERAL ARRANGEMENT	
SCALE	DATE	BY	CHK
APPROVED	DATE	BY	CHK
D010325-100L100		01	A



CH2MHILL

CH2M HILL

2465 Natomas Park Drive

Suite 600

Sacramento, CA

95833-2937

Tel 916.920.6300

Fax 916.920.8463

March 28, 2002

Lincoln King
Regional Water Quality Control Board
3443 Routier Road, Suite A
Sacramento,, CA 94827-3003

Subject: REVIEW OF APPLICATION FOR NPDES PERMIT FOR COSUMNES POWER
PLANT, SACRAMENTO COUNTY, RESPONSE TO COMMENTS

Dear Mr. King:

Thank you for the letter of January 29, 2002 from David Carlson of the Regional Water Quality Control Board ("RWQCB"), commenting on the AFC for the Cosumnes Power Plant ("CPP") project. As you know CH2M HILL submitted an application on behalf of the Sacramento Municipal Utility District (SMUD) for a CPP NPDES permit on January 21, 2002. The application had been modified from information in the AFC, based on your verbal suggestions. This letter is to respond individually and specifically to the items in RWQCB's January 29 letter, with a focus on issues relevant to having a complete NPDES application. As part of the certification process before the California Energy Commission, it is important to confirm when the NPDES application is deemed complete by the Regional Board and Regional Board review is underway. We therefore ask you to confirm completeness of the NPDES application, or let us know what specific further information you need for that determination. In addition, in conjunction with the certification process we are continuing to address water quality issues and impacts. We appreciate your input in that process, and the opportunity to continue discussions with you as your review proceeds.

This letter discusses each of the areas covered in the January 29 letter, matching the paragraph numbering in that letter:

1. RWQCB expresses concern in the January 29 letter whether discharging reverse osmosis reject and multimedia backwash to the cooling tower meets "best practicable treatment." RWQCB suggests that evaporation to dry product be considered. As proposed by SMUD, reverse osmosis and ultrafiltration backwash would average approximately 5 percent of the volume and approximately 6 percent of the total dissolved solids in the cooling tower. Diverting this wastestream would require separate collection and disposal, potentially to a dryer or municipal sewer system. As there is no sewer service in the vicinity and no suitable brine discharge location, drying is the only practical option. Other plants evaporating to dryness as noted by RWQCB are not evaporating only the RO and filtration waste streams.

Drying these low volume waste streams would require additional equipment and substantial operational burdens, and would cause a parasitic load on the power plant, which is equivalent to a loss in efficiency. Collection, hauling and landfill disposal costs would also be incurred. The resulting operational costs alone are estimated to be approximately \$1 M per year. As a result, drying RO reject and multimedia backwash was not considered to be practicable. It is not cost effective for this project. It is clear that the cooling tower can be operated in a manner to receive this water and still meet stringent discharge criteria without degrading beneficial uses. Therefore, the proposed water balance represents best practicable treatment.

Regarding antidegradation, the applicant intends to apply best practicable treatment and is proposing to discharge water of a quality that will not impinge on downstream beneficial uses. In fact, discharges may enhance downstream uses for aquatic habitat, agriculture, and other uses.

2. The January 29 letter comments on application of State Water Resources Control Board Resolution 75-58 to selection of the water supply for the project. It appears that this does not pertain to the completeness of the NPDES application. With respect to this comment as it pertains to the AFC, SMUD notes that Resolution 75-58 applies to applications before the State Board only in two particular situations: (i) when an applicant has applied for a new water right, or to change the place of use, point of diversion, or purpose of use of an existing water right; and (ii) when an applicant has applied for a permit to discharge water.

SMUD does not need to apply to the State Board for a new water right (or for a change in place of use, purpose of use, or point of diversion), but already holds entitlements needed for this project. SMUD therefore believes this policy does not apply to the water supply for the project. (In cases where the Policy is applicable to water supply issues, implementation of the water supply provisions would not affect the RWQCB NPDES permitting process, but would be the responsibility of the SWRCB.)

In the Implementation section, Resolution 75-58 describes obligations of the RWQCB to 1) adopt WDRs, 2) include a monitoring plan and 3) consider other environmental factors, and potentially require an EIR. SMUD intends to comply with these requirements as they apply under Resolution 75-58; of course, the functional equivalent of an EIR will be adopted by CEC in the certification process.

In addition, SMUD notes that the project is consistent with Resolution 75-58's water quality-related provisions relating to wastewater discharges.

- *The Resolution notes that disposal of once-through cooling waters from powerplants to inland water is incompatible with maintaining the water quality objectives of the State Board's "Thermal Plan" and "Water Quality Control Plans."* The CPP plant is not proposing once-through cooling.
 - *The Resolution states that the improper disposal of blowdown from evaporative cooling facilities may have an adverse impact on the quality of inland surface and ground waters and on fish and wildlife.* SMUD believes that disposal of blowdown will not cause adverse impacts on downstream beneficial uses. In fact, SMUD believes that additional flow may extend the usable season of the aquatic habitat of Hadselville, Laguna and Cosumnes Rivers and improve beneficial uses.
 - *According to the Resolution, an important consideration in the increased use of inland water for powerplant cooling or for any other purpose in the Central Valley Region is the reduction in the available quantity of water to meet the Delta outflow requirements necessary to protect Delta water quality objectives and standards. The Resolution states the concern that existing contractual agreements to provide future water supplies to the Central Valley, the South Coastal Basin, and other areas using supplemental water supplies are threatening to further reduce the Central Valley outflow necessary to protect the Delta environment. As noted above, water from CPP would potentially improve water quality in Hadselville and Laguna Creeks and the Cosumnes River during low flow conditions.*
3. *The January 29 letter seeks clarification of water use and water balance information.* Water use was specified in Section III.A of form 2D of the permit application submitted to you on January 21, 2002 and in Figures 8.14-3aR and 3cR submitted with that application. Copies of those figures are attached for ease of reference.
 4. Regarding equipment drains, and in response to RWQCB concerns, SMUD modified the water balance diagrams shown in the AFC to divert equipment drains to the oily-water separator and clarifier for treatment prior to monitoring and discharge under the NPDES permit. These modified diagrams were submitted as part of the NPDES application on January 29, 2002. A copy of those diagrams is attached to this letter for your convenience. We believe this is appropriate treatment for this water.
 5. SMUD appreciates RWQCB bringing the issue of mercury to our attention. The comment does not appear to require any change in the NPDES application. Some further information on this subject is offered here, as it may be useful to your analysis for the NPDES permit. SMUD would add no mercury to process water, and mercury was below levels of detection in the water supply sampled. However, as a conservative measure, SMUD reported 0.5 ug/L in effluent to account for potential presence in makeup water. We appreciate RWQCB's concern for mercury and if it is detected in process water, additional treatment may be necessary prior to discharge. However, the

presence and concentration is only speculative at this time, as mercury has not been detected in makeup water.


With regard to treatment chemicals, as the RWQCB is aware, there are several water conditioning dispersants, biological controls and buffers available that contain no heavy metals or other persistent toxins. They are generally long-chain polyphosphates that according to vendors have very high safety thresholds. The applicant anticipates that these could be used without damage to downstream beneficial uses.

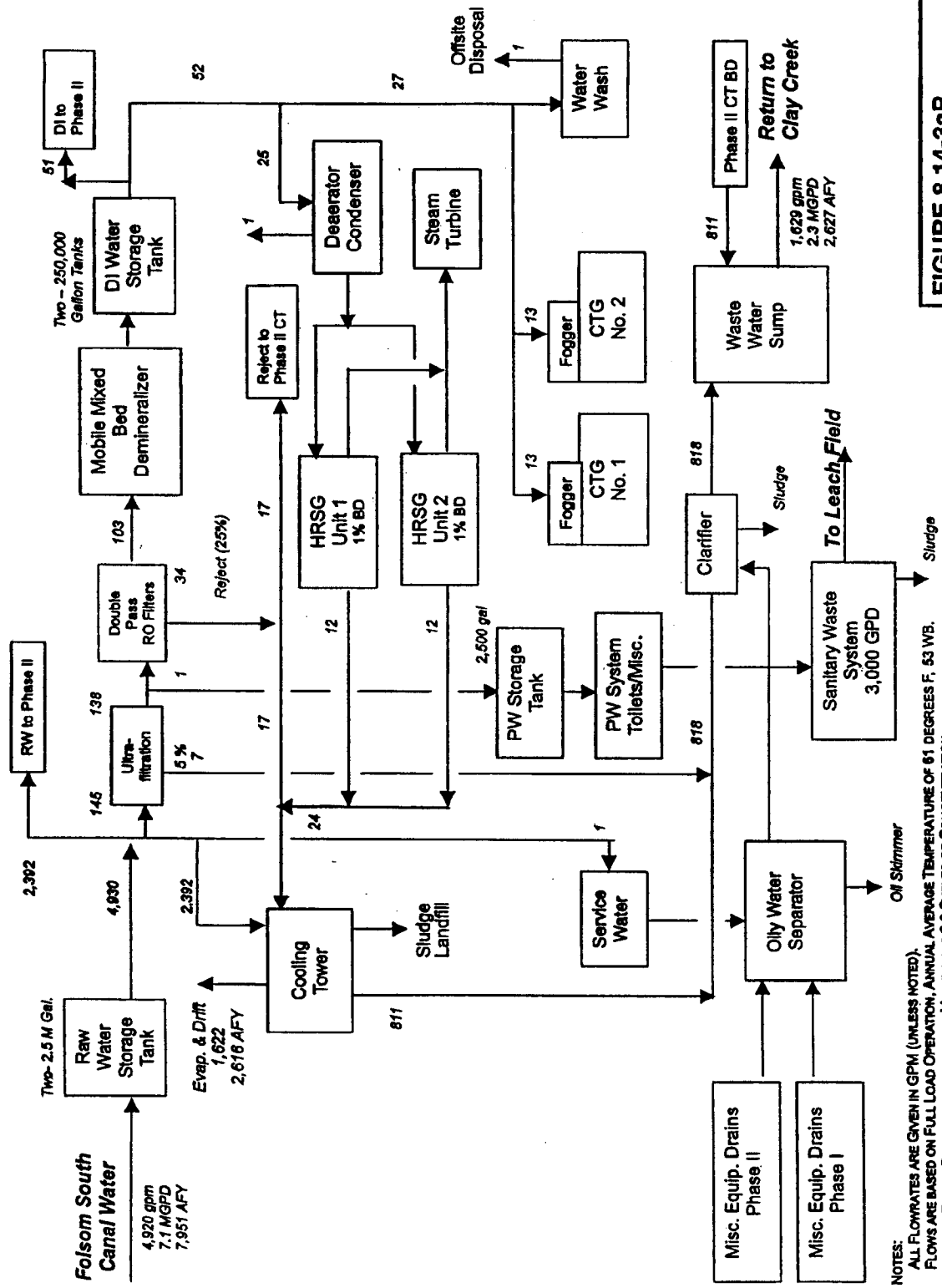
6. The January 29 letter notes a need for more detailed information regarding the proposed stormwater detention basin, and how it is designed to regulate the flow of stormwater discharges. SMUD is not at this time applying for a stormwater NPDES permit, as final design on the project is not yet complete and SMUD plans to file a Notice of Intent for coverage under the General Industrial Stormwater Permit Order. SMUD plans to have stormwater entirely isolated from process water. Sumps and equipment drains would not commingle with stormwater diverted to the stormwater basin.

This concludes an item by item response to the RWQCB letter of January 29, 2002. To the best of our ability, the applicant has responded to all the RWQCB's concerns and requirements for a complete NPDES application. We request that the RWQCB staff advise the CEC that a complete application has been filed, or inform us of any specific data required to complete an application. As time is of the essence, we are prepared to meet with you at any time to discuss these concerns, and we ask that you act promptly. Thank you for your continued assistance and advice on this application.

Sincerely,

CH2M HILL


EJ Koford
Senior Biologist



NOTES:
 ALL FLOWRATES ARE GIVEN IN GPM (UNLESS NOTED).
 FLOWS ARE BASED ON FULL LOAD OPERATION, ANNUAL AVERAGE TEMPERATURE OF 81 DEGREES F, 53 WS.
 COOLING TOWER BLOWDOWN IS BASED ON MAINTAINING 3.0 CYCLES OF CONCENTRATION.
 FLOWS ARE BASED ON FOLSOM SOUTH CANAL WATER CONSTITUENTS SPECIFIED.

SOURCE: PB POWER, INC.

FIGURE 8.14-3aR
PHASE I - ANNUAL AVERAGE
WATER BALANCE DIAGRAM
 COSUMNES POWER PLANT
 APPLICATION FOR CERTIFICATION
CH2MHILL

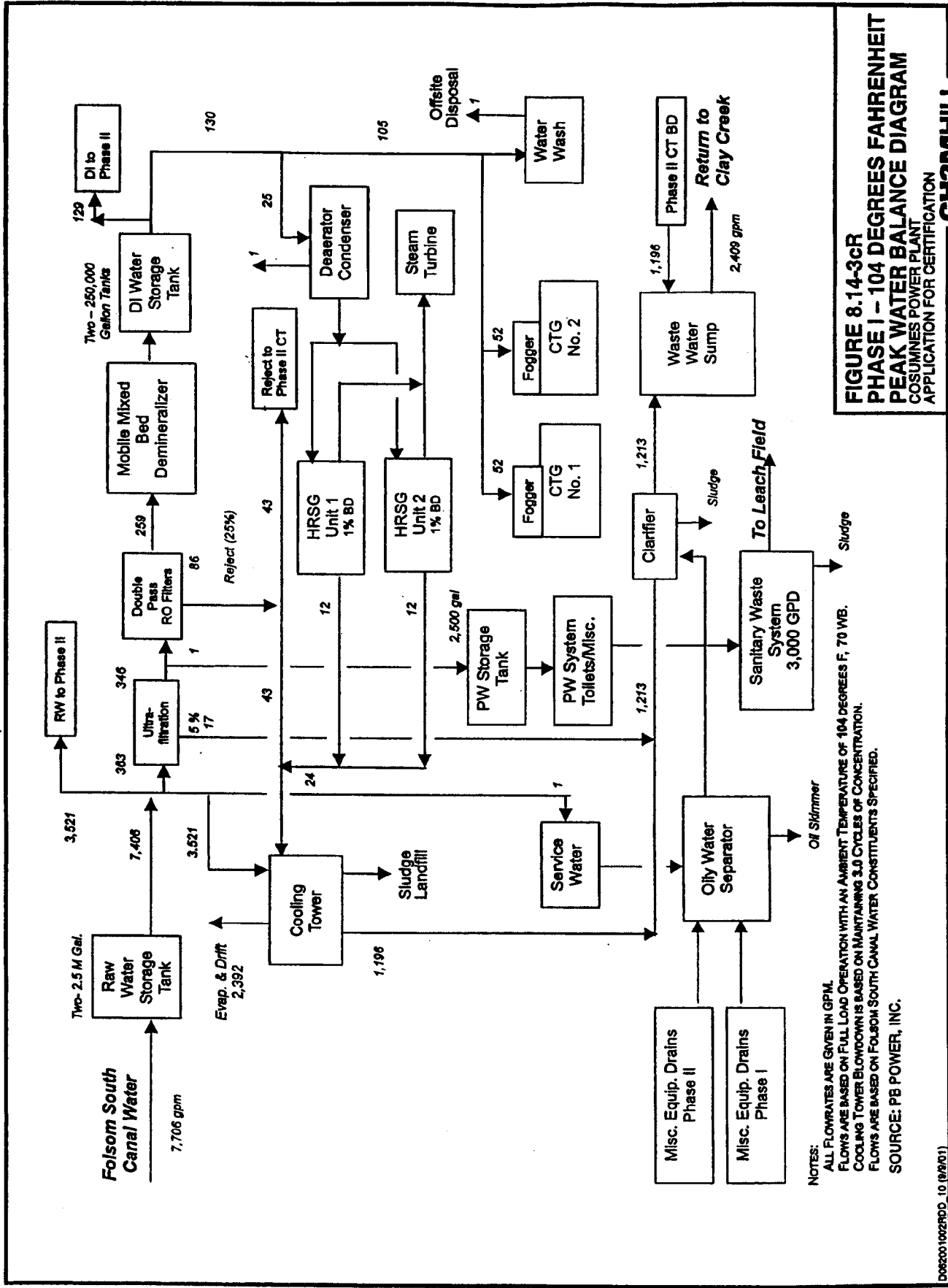


FIGURE 8.14-3cR
PHASE I - 104 DEGREES FAHRENHEIT
PEAK WATER BALANCE DIAGRAM
COSUMNES POWER PLANT
APPLICATION FOR CERTIFICATION
CH2MHILL

CH2MHILL

F A X

Sacramento
Tel (916)920-0212
Fax (916)614-3590**To:** Lincoln King**From:** EJ Koford**Company:** RWQCB**Date:** April 12, 2002**Fax No.:** 255-3015**Total Pages:** 43**Voice No.:** 255-3033**Message:**

Lincoln,

Thanks for talking to me yesterday. It gave me a clearer picture of what information you feel you are missing to consider the NPDES application complete.

From our conversation it is evident that you have not seen the substantial alternative cooling analysis that SMUD prepared for CEC. A copy is attached here, although I have not included all the figures. I think this will address your questions with respect to alternative sources of water and explains how we arrived at recirculating wet cooling as the best practical method.

I understand you also have some questions about disposal to land and salt balance, which I'm working on. Let me know if this report meets your needs for alternative cooling analysis.

(Sorry, too big to email).

EJK

COSUMNES POWER PLANT (01-AFC-19)

DATA RESPONSE, SET 1E

**(Supplemental Responses to Data Requests:
111, 112, 116, 152, and 161)**

POWER PLANT COOLING ANALYSIS

Submitted by
**Sacramento Municipal
Utility District (SMUD)**

March 8, 2002

CPP: APPLICATION FOR NPDES PERMIT- POTENTIAL FOR LAND APPLICATION - CLARIFICATION OF SALT BALANCE CALCULATIONS

PREPARED FOR: Lincoln King (RWQCB)
Kevin Hudson (SMUD)
Katharine Wagner (DBSR)

PREPARED BY: EJ Koford

COPIES: Jluckhardt (DBSR)

DATE: April 25, 2002

In a telephone conversation, Lincoln mentioned that the SMUD NPDES application had not discussed the rationale for disregarding land application as a feasible disposal option for cooling water from the proposed Cosumnes Power Plant (CPP), to be located adjacent to Rancho Seco Plant. He also noted that SMUD had not make it clear how it had determined that approximately 5 percent of volume and 6 percent of dissolved solids would result from reverse osmosis reject in the cooling tower. Lincoln indicated that missing these two items could lead to the Regional Water Quality Control Board (RWQCB) determining that the application was inadequate. The attached information is intended to respond to these questions and ensure a complete application.

We trust that this clarification of these issues provides the information needed for review of the NPDES application, and we look forward to our meeting with RWQCB Staff on May 7, 2002. Please contact me if you have additional questions or require other information.

Cosumnes Power Plant
Application for NPDES Discharge Permit
Addendum B: April 25, 2002

The Feasibility of Land Application as a Disposal Option

SMUD evaluated alternative options for cooling water disposal as part of preliminary design and engineering for the Cosumnes Power Plant (CPP) project. The following summarizes the findings of that evaluation.

Policy 7558, Principle 2.

Where the Board has jurisdiction, use of fresh inland waters for powerplant cooling will be approved by the Board only when it is demonstrated that the use of other water supply sources or other methods of cooling would be environmentally undesirable or economically unsound.

CPP is estimated to discharge 2.3 million gallons per day of cooling water to Clay Creek east of the Rancho Seco discharge. The surrounding area is used for pasture, vineyards, cattle grazing and Open Space and it would seem there are opportunities to use the discharged water for land application. However, there are some issues with feasibility.

1. The irrigation season is generally from April through September, with essentially no irrigation requirements from November through March. During these 5 months effluent would need to be stored in tanks, ponds or reservoirs. For comparison, Rancho Seco Reservoir, which covers approximately 164 acres, holds about 929 million gallons. Therefore, a storage reservoir approximately a third the size of Rancho Seco Reservoir would be needed. A bermed reservoir of 55 acres at a depth of 23 feet would more than double the impact area of the CPP project and increase the management and mitigation costs for that water.
2. According to State Water Resources Control Board (SWRCB) Resolution No. 75-58, land disposal of cooling tower wastes is specifically prohibited except to salt sinks or Regional Water Quality Control Board (RWQCB)-approved, lined facilities. It specifically reads as follows:

"Discharge Prohibitions

The discharge to land disposal sites of blowdown waters from inland powerplant cooling facilities shall be prohibited except to salt sinks or to lined facilities approved by the Regional and State Boards for the reception of such wastes."

This prohibition may restrict the use of unlined storage facilities and appears to disfavor and restrict land application as a matter of policy.

3. In practical terms, local farmers pump water from Clay Creek and Hadselville Creek for irrigation whenever flows are available. This use of surface water offsets the need to pump groundwater and may contribute incrementally to replenishment of groundwater. The nearest diversion pump is located adjacent

to the SMUD property boundary, approximately 0.5 mile west of the project. When needed, water discharged by the project into Clay Creek would be available for irrigation downstream.

Clarification on Salt Balance Calculations

In figure 8.14-3aR, provided previously to the RWQCB (March 28, 2002), inflow from the raw water storage tank is shown as 7,406 gpm. 363 gpm goes to Ultrafiltration (UF) and then to Reverse Osmosis (RO), both of which produce reject. If ALL the salt from UF and RO go to the cooling tower, the contribution is $363/7406$ or 5%.

Similarly in Figure 8.14-3aC, provided previously to the RWQCB (March 28, 2002), inflow from the raw water storage tank is shown as 4,930 gpm. 145 gpm goes to UF and then to RO, both of which produce reject. If ALL the salt from UF and RO go to the cooling tower, the contribution is $145/4,930$ or 3%.



Winston H. Hickox
Secretary for
Environmental
Protection

California Regional Water Quality Control Board

Central Valley Region

Robert Schneider, Chair



Gray Davis
Governor

Sacramento Main Office

Internet Address: <http://www.swrcb.ca.gov/rwqcb5>
3443 Routier Road, Suite A, Sacramento, California 95827-3003
Phone (916) 255-3000 • FAX (916) 255-3015

13 May 2002

Colin Taylor
Sacramento Municipal Utility District
6201 S Street
Sacramento, CA 95817

COMPLETE PERMIT APPLICATION, SACRAMENTO MUNICIPAL UTILITY DISTRICT, COSUMNES POWER PLANT, SACRAMENTO COUNTY

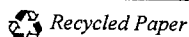
On 21 January 2002, the Sacramento Municipal Utility District submitted a permit application to discharge waste from the proposed Cosumnes Power Plant to Clay Creek under an individual National Pollutant Discharge Elimination System (NPDES) permit. In response to our concerns with the application, the District submitted supplemental information to our office on 28 March 2002 and 25 April 2002. The proposed power plant is to be located adjacent to the Rancho Seco Nuclear Generating Station in Herald, Sacramento County.

Upon review of the permit application and supplemental information, the Regional Board finds that the information provided on the proposed discharge and receiving waters is sufficient for the preparation of a draft NPDES permit. Therefore, for purposes of preparing a draft permit, the application is complete. However, there remain issues concerning compliance with water quality standards, including State Water Resources Control Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, which are currently being evaluated by Regional Board staff. As a result, additional information may be requested of SMUD. Resolution 68-16 issues deal with the extent to which receiving waters can be degraded, which impact effluent limits eventually imposed by the Regional Board. The District has indicated that they will design the treatment and disposal systems to meet whatever effluent limits are eventually imposed by the Regional Board, so we do not expect Resolution 68-16 compliance to preclude a discharge by SMUD.

Should you have any questions regarding this letter, please contact Lincoln King at (916) 255-3033.

PATRICIA H. LEARY, P.E.
Chief, NPDES Unit, Delta Watershed

California Environmental Protection Agency



The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at <http://www.swrcb.ca.gov/rwqcb5>

Colin Taylor
Sacramento Municipal Utility District
Cosumnes Power Plant

- 2 -

13 May 2002

cc: Frances McChesney, Office of Chief Counsel, State Water Resources Control Board, Sacramento
Paul Richins, Jr., California Energy Commission, Sacramento
Steve Larson, California Energy Commission, Sacramento
Richard Latteri, California Energy Commission, Sacramento
Richard A. Sapudar, California Energy Commission, Sacramento
Janna Herran, California Department of Fish and Game, Region 2, Rancho Cordova
Jan Schori, Sacramento Municipal Utility District, Sacramento
Bill Jennings, Delta Keeper, Stockton
E.J. Koford, CH2M Hill, Sacramento
Katharine E. Wagner, Downey, Brand, Seymour, & Rohwer, Sacramento
Sky Stanfield, Adams, Broadwell, Joseph and Cardozo, South San Francisco



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Fax 916.920.8463

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May 15, 2002

Lincoln King
California Regional Water Quality Control Board
3443 Routier Road, Suite A.
Sacramento, CA 95827-3003

SUBJECT: CPP: Modification to NPDES Permit Application of 1/21/02

Dear Mr. King:

You noted in an email that there are two discrepancies in the CPP application that should be revised. The corrections are to indicate that hazardous materials are stored on site (Form 1, Item II) and check the box indicating "Industrial Process Wastewater" on Form 200, Section II.

Hazardous wastes will be accumulated and stored on-site for less than 90 days, as indicated in the attached pages (page 8.13-10 from AFC). However, because they will be stored for less than 90 days, no RCRA permit would be required.

Approximately 95% of the discharge would consist of cooling tower water. However, a small amount of reverse osmosis reject and washdown water (as indicated on Form 2D A) would also be diverted into the cooling tower. Therefore, it appears appropriate that "Process wastewater" should also be checked.

The attached pages should supercede those included in the original application. Please contact me at (916)286-0305 if you require further information or have any questions.

Sincerely,

EJ Kotford
Sr. Biologist
CH2MHILL

**CALIFORNIA ENVIRONMENTAL
PROTECTION AGENCY**


State of California
Regional Water Quality Control Board

**APPLICATION/REPORT OF WASTE DISCHARGE
GENERAL INFORMATION FORM FOR
WASTE DISCHARGE REQUIREMENTS OR NPDES PERMIT**



II. TYPE OF DISCHARGE

Check Type of Discharge(s) Described in this Application (A or B):

☐ A. WASTE DISCHARGE TO LAND

☒ B. WASTE DISCHARGE TO SURFACE WATER

Check all that apply:

☐ Domestic/Municipal Wastewater Treatment and Disposal

☒ Cooling Water

☐ Mining

☐ Waste Pile

☐ Wastewater Reclamation

☐ Other, please describe: _____

☐ Animal Waste Solids

☐ Land Treatment Unit

☐ Dredge Material Disposal

☐ Surface Impoundment

☒ Industrial Process Wastewater

☐ Animal or Aquacultural Wastewater

☐ Biosolids/Residual

☐ Hazardous Waste (see instructions)

☐ Landfill (see instructions)

☐ Storm Water

III. LOCATION OF THE FACILITY

Describe the physical location of the facility.

1. Assessor's Parcel Number(s)
Facility: 140-050-010, 140-090-008
Discharge Point: 140-050-010

2. Latitude
Facility: SAME
Discharge Point: 38.34

3. Longitude
Facility: SAME
Discharge Point: 121.12

IV. REASON FOR FILING

☒ New Discharge or Facility

☐ Changes in Ownership/Operator (see instructions)

☐ Change in Design or Operation

☐ Waste Discharge Requirements Update or NPDES Permit Reissuance

☐ Change in Quantity/Type of Discharge

☐ Other: _____

V. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Name of Lead Agency: CALIFORNIA ENERGY COMMISSION

Has a public agency determined that the proposed project is exempt from CEQA? ☐ Yes ☒ No

If Yes, state the basis for the exemption and the name of the agency supplying the exemption on the line below.

Basis for Exemption/Agency: _____

Has a "Notice of Determination" been filed under CEQA? ☐ Yes ☒ No

If Yes, enclose a copy of the CEQA document, Environmental Impact Report, or Negative Declaration. If no, identify the expected type of CEQA document and expected date of completion.

Expected CEQA Documents:

☐ EIR

☐ Negative Declaration

Expected CEQA Completion Date: JUNE 2002

☒ REC

FORM 1 GENERAL	 U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION <i>Consolidated Permits Program</i> <i>(Read the "General Instructions" before starting.)</i>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="10">I. EPA I.D. NUMBER</th> </tr> <tr> <td colspan="10" style="height: 20px;"></td> </tr> <tr> <td colspan="10" style="height: 20px;"></td> </tr> </table>	I. EPA I.D. NUMBER																													
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LABEL ITEMS		<p>COSUMNES POWER PLANT SMUD 6201 S STREET SACRAMENTO, CA 95817 ATTN: COLIN TAYLOR</p> <p>RANCHO SECO GENERATING STATION HERALD, CA</p> <th colspan="2" style="text-align: left;">GENERAL INSTRUCTIONS</th>	GENERAL INSTRUCTIONS	
<p>I. EPA I.D. NUMBER</p> <p>III. FACILITY NAME</p> <p>V. FACILITY MAILING ADDRESS</p> <p>VI. FACILITY LOCATION</p>			<p>a preprinted label has been provided, affix in the designated space. Review the information carefully; if any of it is incorrect, correct it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the appropriate fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.</p>	

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X'			SPECIFIC QUESTIONS	MARK 'X'		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)	X		
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		See Attached	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	X			J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1	SKIP	COSUMNES POWER PLANT
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IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)		B. PHONE (area code & number)	
2	TAYLOR, COLIN, DIRECTOR	916	732 6724

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX			
3	6201 S STREET		
B. CITY OR TOWN		C. STATE	D. ZIP CODE
4	SACRAMENTO	CA	95817

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER			
5	CLAY EAST ROAD		
B. COUNTY NAME			
6	SACRAMENTO		
C. CITY OR TOWN		D. STATE	E. ZIP CODE
6	HERALD	CA	95638
F. COUNTY CODE (if known)			

The chemical feed area drains will collect spillage, tank overflows, effluent from maintenance operations, and liquid from area washdowns. After neutralization, if required, water collected from the chemical storage areas will be directed to the cooling tower basin. The quantity of this effluent is expected to be minimal.

TABLE 8.13-2
Hazardous Wastes Generated at the CPP Facility

Waste	Origin	Composition	Quantity	Classification	Disposal
Lubricating oil	Small leaks and spills from the gas turbine lubricating oil system	Hydrocarbons	500 lb/yr	Hazardous	Cleaned up using sorbent and rags – disposed by certified oil recycler
Lubricating oil filters	Gas turbine lubricating oil system	Paper, metal, and hydrocarbons	1,000 lb/yr	Hazardous	Recycled by certified oil recycler
Laboratory analysis waste	Water treatment	Sulfuric acid	Approximately 840 gallons per year	Hazardous	Recycled by certified recycler
SCR catalyst units (CO catalyst no currently required)	SCR system	Metal and heavy metals, including vanadium	8,000 lb every 3 to 5 years (Warranty is 3 years-use tends to be 3 to 5 years)	Hazardous	Recycled by SCR manufacturer or disposed in Class I landfill
CO catalyst units (CO catalyst currently not required)	Auxiliary boiler	Metal and heavy metals, including vanadium	8,000 lb every 3 to 5 years	Hazardous	Recycled by manufacturer
Oily rags	Maintenance, wipe down of equipment, etc.	Hydrocarbons, cloth	525 lb/yr (Approximately 1,400 rags per year)	Hazardous	Recycled by certified oil recycler
Oil sorbents	Cleanup of small spills	Hydrocarbons	Approximately 340 lb/yr	Hazardous	Recycled or disposed of by certified oil recycler
Cooling tower sludge	Deposited in cooling tower basin by cooling water	Dirt from air	170 to 340 lb/yr	May be hazardous, but usually not	Class II landfill, if nonhazardous; Class I, if hazardous
Chemical feed area drainage	Spillage, tank overflow, area washdown water	Water with water treatment chemicals	Minimal	May be hazardous, if corrosive	Onsite neutralization, if required, then discharged to cooling tower basin

8.13.5 Waste Disposal Sites

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste [MSW], or garbage) will be recycled or deposited in a Class III landfill. Nonhazardous liquid wastes